

WHAT IS CLAIMED IS:

5                   1. A pedicle screw assembly for use in a spinal fixation system, the assembly comprising:

                  a pedicle screw having a head portion and a threaded shaft portion extending therefrom;

10                  a body having an aperture adapted for receiving the threaded portion of the screw therethrough while retaining at least a portion of the head portion in a base of the body, a rod passageway, and oppositely threaded internal and external threads;

                  a set screw having exterior threads for engaging the internal threads of the body; and

15                  a nut having internal threads for engaging the external threads of the body.

20                  2. The assembly of claim 1, wherein the head portion of the pedicle screw includes a rounded head, and wherein the head and base form a spherical joint such that the body and head pivot with respect to one another.

                  3. The assembly of claim 2, including a compression washer disposed in the base for retaining the head of the pedicle screw within the base.

25                  4. The assembly of claim 3, wherein the compression washer is press-fit within the base and includes a concave facet disposed above the head of the pedicle screw.

30                  5. The assembly of claim 1, wherein the threaded portion of the pedicle screw is tapered.

6. The assembly of claim 5, wherein a major diameter of the threaded portion is generally constant, and wherein a minor diameter of the threaded portion is tapered.

5                   7. The assembly of claim 1, wherein the pedicle screw includes a drive slot formed in the head portion thereof.

8. The assembly of claim 1, wherein the rod passageway and the pedicle screw aperture of the body are generally transverse to one another.

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9. The assembly of claim 1, including a rod extending through the rod passageway.

10. The assembly of claim 9, wherein the set screw is adapted to travel within the body and contact the rod, securing it in place within the body.

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11. The assembly of claim 1, wherein the set screw includes a drive slot therein for tightening by a driver device.

12. The assembly of claim 1, wherein the nut has a polygonal outer configuration for tightening by a socket device.

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13. A polyaxial pedicle screw assembly for use in a spinal fixation system, the assembly comprising:

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a pedicle screw including a head portion having a rounded head and a drive slot therein and a threaded shaft portion extending therefrom;

a body having an aperture adapted for receiving the threaded portion of the screw therethrough while retaining the rounded head in a base of the body, a rod passageway generally transverse to the pedicle screw aperture, and oppositely threaded internal and external threads;

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a rod extending through the rod passageway;

a set screw having exterior threads for engaging the internal threads of the body and having a drive slot for selectively being moved into contact with the rod to secure the rod within the body;

5 a nut having internal threads for engaging the external threads of the body;

wherein the round head of the screw and the base form a spherical joint permitting pivoting therebetween; and

10 wherein the set screw and nut are fastened in opposite directions to counteract fastening forces applied to the assembly.

14. The assembly of claim 13 including a compression washer disposed in the base for retaining the head of the pedicle screw within the base.

15 15. The assembly of claim 14, wherein the compression washer is press-fit within the base and includes a concave facet disposed above the head of the pedicle screw.

20 16. The assembly of claim 13, wherein the threaded portion of the pedicle screw is tapered.

25 17. The assembly of claim 16, wherein a major diameter of the threaded portion is generally constant, and wherein a minor diameter of the threaded portion is tapered.

18. A spinal fixation system, comprising:

a plurality of pedicle screw assemblies; and

a rod extending between the pedicle screw assemblies;

wherein each pedicle screw assembly comprises:

a pedicle screw including a head portion having a rounded head and a threaded shaft portion extending therefrom;

5 a body having an aperture adapted for receiving the threaded portion of the screw therethrough while retaining the rounded head in a base of the body to permit the screw and body to pivot with respect to one another, a rod passageway adapted for insertion of the rod therethrough, and oppositely threaded internal and external threads;

10 a set screw having exterior threads for engaging the internal threads of the body and having a drive slot for being selectively inserted into the body and in contact with the rod to secure the rod in place within the body; and

a nut having internal threads for engaging the external threads of the body.

15 19. The system of claim 18, including a compression washer disposed in the base above the screw for retaining the head of the screw within the base.

20 20. The system of claim 18, wherein a major diameter of the threaded portion is generally constant, and wherein a minor diameter of the threaded portion is tapered.

21. The system of claim 18, wherein the pedicle screw includes a drive slot formed in the head portion thereof.

25 22. The system of claim 18, including a tightening device for simultaneously tightening the set screw and the nut.

30 23. The system of claim 22, wherein the tightening device comprises a wrench having a handle, a shaft and a socket adapted to engage the nut, and a driver having a handle, a shaft slidably extending through the shaft of the wrench and a driver end for engaging the driver slot of the set screw.